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# ENVIRONMENTAL Fact Sheet

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## Fundamentals of Xeriscaping and Water-Wise Landscaping

The concept of xeriscape began in Denver in response to severe water shortages. Though initially popular in the dry, thirsty lands of the western United States, xeriscaping is rapidly gaining followers in the New England states as well. Here, where water has traditionally been plentiful, competing uses have created development-related shortages. Water-wise landscaping combines the principles of xeriscaping with the use of natural plantings. Not only does the concept of water-wise landscaping save water, money, upkeep and time, the results are beautiful.

The average American family applies as much as 50 percent of their total water use on their landscape each spring and summer, very little of it actually being utilized by the plants. A water-wise landscape can reduce that wasteful use by 70 percent with the added benefit of increasing property value.

Though the Greek work “xeros” means “dry,” a xeriscape is not. The term refers to the fact that xeriscapes use very little water. It isn’t just replacing lawns with rocks and sand. It’s an integrated program that takes seven basic principles into consideration. This fact sheet outlines those seven elements and goes a step or two beyond xeriscaping to incorporate ideas from the natural landscaping movement.

### Planning and Design

Every garden can benefit from good design. A well thought-out plan is essential for a water-wise landscape. Specific design considerations for a water-wise landscape are listed below.

- Devise a plan grouping together plants with similar water needs to create distinct watering zones.
- Plan zones so that they transition from least drought-tolerant to most, if possible. Place the least drought-tolerant zone closest to a water source, in humus-rich soil, dappled shade, or near a water feature.
- Utilize or modify existing slopes to divert runoff water to the less drought-tolerant plants in your xeriscape.
- Terrace slopes you cannot modify to minimize runoff and erosion losses.
- Incorporate a water feature into the highest water use zone. A recirculating waterfall or pond provides a moisture-laden environment where ferns and other water-loving plants can thrive without additional irrigation. This area should be shaded or in dappled sun and shade to reduce water loss from evaporation. You can create dappled shade by planting dwarf trees or shrubs near, but not next to, your water feature.

- Locate the most drought-tolerant plants in areas with southern or western exposures, as these tend to be the hottest and driest spots. Ornamental grasses make a dramatic statement in the landscape and most, being prairie natives, require no watering whatsoever.
- Minimize the use of rocks, plastic, and sand in high heat areas. These materials will simply raise temperatures and often cause runoff problems.

## **Soil Preparation**

Proper soil preparation is the foundation of your xeriscape. Healthy soils require less water and chemical amendments. The following soil preparation practices will help you achieve and keep a healthy soil.

- Test your soil prior to planting. Your soil type and texture will dictate the varieties of plants you choose for your site and the amendments you need to add to it. Soil test kits are available from the UNH Cooperative Extension Service. See [ceinfo.unh.edu/Office.htm](http://ceinfo.unh.edu/Office.htm) for a complete listing of UNH county extension services and contacts.
- Till or turn the soil before planting to reduce compaction. Loosening the soil allows for better root development and percolation of water and air.
- Add organic matter. This is especially important in the high water use zones. Organic matter like peat moss, manure and compost helps retain soil moisture.

## **Utilize Turf Areas Efficiently**

Contrary to popular thought, turf can play a significant role in a water-wise landscape. It provides transportation corridors through outdoor “rooms,” play areas within them, and is an important element in retaining soil and cooling the environment. Incorporate the following practices into your water-wise landscape design.

- Consider using drought-tolerant, fine-leaved fescues like hard fescue and Chewings fescue. These turf grasses, once established, need no watering whatsoever and are well adapted to our cool New Hampshire weather.
- Plan turf areas carefully, taking irrigation needs and the direction of foot traffic into consideration. Your turf areas should lead you easily through your landscape.

## **Irrigation**

A water-wise landscape is not a waterless one. Efficient irrigation is a very important component in this type of landscaping. The following practices allow you to irrigate your landscape without wasting water.

- Watering frequency should be based on soil moisture, weekly precipitation, and plant/turf conditions. Typically, established landscape plants and turf grass require an inch of water per week. Water-wise landscaping is designed to minimize the need for additional irrigation.
- Utilize low-flow, hose end irrigation. Choose drip or trickle emitters where irrigation is needed.
- Consider installing a rain barrel. A drop or two of baby oil on the water surface discourages mosquito egg depositions.
- Be a weather watcher. Never irrigate if your area has received an inch of rain in the past week. A rain gauge will help keep track of precipitation amounts. Many attractive and

whimsical ones are available at garden centers. Place your rain gauge in an open area where overhanging plant material won't divert rain from the gauge

- Avoid watering your hot/dry zone plants completely. Unless you are under extreme drought conditions they shouldn't need it.
- Check irrigation systems for leaks and malfunctions. Keep small replacement parts like hose end washers on hand.

## **Use Water-Efficient Plants**

The plants you choose for your landscape will dictate how much water you need to give them for their survival. Some plants are more drought-tolerant than others and are better choices for a water-wise landscape. Breaking your landscape up into water use zones also helps you orchestrate and manage plantings. The following suggestions will help you choose water-efficient plants for your landscape.

- Plants native to our area are better adapted to the climate and require less water. Check with your county cooperative extension for recommended native plantings or see the list of drought-tolerant plants at the end of this fact sheet. See [ceinfo.unh.edu/Office.htm](http://ceinfo.unh.edu/Office.htm) for a complete listing of UNH county extension services and contacts.
- Many dry prairie plants are adapted to arid conditions and work well in your "hot" zones, but avoid plants like cacti that do not thrive outdoors in New Hampshire. Many of the ornamental grasses are North American prairie natives that do quite well in New Hampshire.
- Group water-hungry plants like roses together in a high water use zone where they can benefit from available water.

## **Mulch**

Mulch not only reduces weed growth, it minimizes evaporation. By eradicating weeds you eliminate competition for available water. Mulch can be used almost anywhere in the landscape from recycling grass clippings onto lawns to sheet composting in the vegetable garden. The following practices relate to effective utilization of mulch.

- Apply organic mulch 3-4" deep for effective weed control and moisture retention. Water the mulch thoroughly at the time of application. Avoid using peat moss as a mulch. Though an excellent moisture-retentive soil amendment, its very high water-holding qualities make it a poor mulch. As it dries, peat moss mulch will actually pull water from the soil beneath it.
- Instead of maintaining a conventional compost bin, consider trying sheet composting. This a process of laying down a sheet of compost material as a mulch in the walkways between rows in the vegetable garden. At the end of the growing season, till or fork everything under.
- Renew organic mulch on a yearly basis.
- Mix a nitrogen-rich fertilizer like dried blood in with organic mulch. As it breaks down, organic mulch draws nitrogen from the soil, robbing your plantings of this essential nutrient.
- Use newspapers as mulch. Most modern newsprint is non-toxic soy-based ink, so it will not harm the environment. Use no more than two layers to avoid forming a water and nutrient flow barrier. Cover the newspaper with a thin layer of organic mulch for aesthetics and to hold it in place.
- Avoid non-porous plastic, gravel, marble chips and stones as mulch. In sunny locations they act as a heat sink, drying the soil beneath. Restrict these items to walkways.

## Maintenance

Though a water-wise landscape can be designed to be practically maintenance free, it cannot be completely neglected. The following practices keep your landscape plants and turf from being stressed. Healthy plants require less water.

- Weed routinely.
- Mow turf as needed, but raise your mower blades to a height of 2-3 inches.
- Check for pest and disease infestations and control accordingly.
- Fertilize regularly, based on soil testing.
- Prune and deadhead plant materials as needed.

The following is a list of plant materials well adapted for water-wise landscaping in New Hampshire.

### Ornamental Grasses:

*Alopecurus pratensis*, Foxtail grass, Zone 4

*Deschampsia cespitosa*, Tufted Hair Grass, Zones 4 & 5

*Molina arundinacea*, Purple Moor Grass, Zones 4 & 5

*Phalaris arundinacea*, Ribbon Grass, Zone 4

### Trees and Shrubs:

*Acer negundo*, Box elder

*Cotoneaster spp*

*Crataegus spp.*, Hawthorn

*Juniperus spp*, Junipers

*Kalmia latifolia*, Mountain Laurel

*Prunus Americana*, American plum

*Rosa Rugosa*, Beach Rose

*Syringa spp*, lilac

### Perennial Flowers

*Achillea spp*, Yarrow, Zone 3

*Asclepias tuberosa*, Butterfly Weed, Zone 3

*Baptisia australis*, False Indigo, Zone 3

*Coreopsis spp*, Zone 3

*Dianthus plumarius*, Grass Pink, Cottage Pink, Zone 3

*Echinacea purpurea*, Purple Coneflower, Zone 3

*Gypsophila paniculata*, Baby's Breath, Zone 3

*Hemerocallis spp*, Daylily, Zones 3-4

*Perovskia atriplicifolia*, Russian Sage, Zone 5

*Rudbeckia spp.*, Black-eyed Susan, Zones 3-4

*Sedum spp.*, Stonecrop, Zones 3-4

*Stachys spp*, Lamb's Ears, Zone 4

### Annual Flowers

*Cleome spinosa*, Spiderflower

*Coreopsis tinctoria*

*Euphorbia marginata*, Snow-on-the-Mountain

*Gaillardia pulchella*, Blanket Flower

*Helianthus annus*, Sunflower

*Portulaca grandiflora*

*Tithonia rotundifolia*, Mexican Sunflower  
*Salvia farinacea*, Blue Salvia

### **For Additional Information**

Please contact the Drinking Water and Groundwater Bureau at (603) 271-2513 or [dwgbinfo@des.state.nh.us](mailto:dwgbinfo@des.state.nh.us) or visit our website at [www.des.nh.gov/dwgb](http://www.des.nh.gov/dwgb). All of the bureau's fact sheets are on-line at [www.des.nh.gov/dwg.htm](http://www.des.nh.gov/dwg.htm).

*Xeriscape Council of New Mexico*. Complete discussion of the seven principles of xeriscape [www.xeriscapenm.com/Principles.html](http://www.xeriscapenm.com/Principles.html)

University of Vermont, Department of Plant and Soil Science. Detailed description of how to grow ornamental grasses.

<http://pss.uvm.edu/ppp/articles/orngress.html>

*Wild Ones Natural Landscapers, Ltd.* Discussion about landscaping with native plants. Though geared to the Midwest, has some useful information.

[www.for-wild.org/](http://www.for-wild.org/)

### **References:**

\_\_\_\_\_; *MIL-Handbook-1165, Water Conservation*; US Dept. of Defense; 1997; pp 67-73.  
Vickers, Amy; *Handbook of Water Use and Conservation*; WaterPlow Press, Amherst, MA; 2001; pp 140-223.

Note: This fact sheet is accurate as of January 2007. Statutory or regulatory changes, or the availability of additional information after this date may render this information inaccurate or incomplete.